

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 09/733476

Filing Date: December 8, 2000

Title: I/C PACKAGE/THERMAL-SOLUTION RETENTION MECHANISM WITH SPRING EFFECT

Page 3

Dkt. 884.355US1

IN THE CLAIMS

Please amend the claims as follows:

1. (Canceled)
2. (Currently Amended) A retention mechanism for mounting an integrated circuit package to a circuit board, comprising:
a dish-shaped, elastically deformable pressure plate, having a first apex and a first periphery spaced away from the first apex, the pressure plate being deformable by applying a first force to the first periphery directed generally towards the first apex;
a dish-shaped, elastically deformable backing plate, having a second apex and a second periphery spaced away from the second apex, the backing plate being deformable by applying a second force to the second periphery directed generally towards the second apex; and
means for simultaneously applying the first and second deforming forces to the first and second peripheries to engage the first apex with a surface of the integrated circuit package and the second apex with a surface of the circuit board so as to effect continuous electrical continuity between the integrated circuit package and the circuit board, ~~The retention mechanism of claim 1~~ wherein an average contact resistance between the integrated circuit package and the circuit board is less than about 50 milliohms.
3. (Original) The retention mechanism of claim 2 wherein the average contact resistance is about 13 milliohms.
4. (Currently Amended) The retention mechanism of claim 12 further comprising an elastically deformable gasket positioned between the pressure plate and the integrated circuit package.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 09/733476

Filing Date: December 8, 2000

Title: IC PACKAGE/THERMAL-SOLUTION RETENTION MECHANISM WITH SPRING EFFECT

Page 4

Dkt: 884.355US1

5. (Cancelled)
6. (Original) The retention mechanism of claim 4 wherein the gasket has a height less than about 2 millimeters.
7. (Original) The retention mechanism of claim 6 wherein the gasket has a height less than about 1 millimeter.
8. (Currently Amended) The retention mechanism of claim 1 2 wherein the plates are made from a material selected from the group consisting of beryllium copper and steel.
- 9 - 15. (Canceled)
16. (Currently Amended) A retention mechanism comprising:
a paraboloid, elastically deformable pressure plate, having a concave surface, a convex surface, a summit, and a periphery spaced away from the summit, the pressure plate being deformable by applying a first force to the periphery directed generally towards the summit;
an integrated circuit package having a top and a bottom surface, the convex surface of the pressure plate being contactable by the top surface;
a circuit board having a top and a bottom surface, the bottom surface of the integrated circuit package being contactable by the top surface; and
a paraboloid, elastically deformable backing plate, having a concave surface, a convex surface, a summit, and a periphery spaced away from the summit, the backing plate being deformable by applying a second force, opposing the first force, to the periphery of the backing plate directed generally towards the summit of the backing plate, the bottom surface of the circuit board being contactable by the convex surface of the backing plate; and

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 09/733476

Filing Date: December 8, 2000

Title: I/C PACKAGE/THERMAL SOLUTION RETENTION MECHANISM WITH SPRING EFFECT

Page 5

Dkt: 884.355US1

- one or more fasteners to simultaneously apply the first and second deforming forces to the peripheries of the plates to engage the top surface of the integrated circuit package with the convex surface of the pressure plate and the bottom surface of the circuit board with the convex surface of the backing plate and to deform the plates so as to effect continuous electrical continuity between the integrated circuit package and the circuit board. ~~The retention mechanism of claim 11~~ wherein the summit of the pressure plate is located on the convex surface of the pressure plate and the periphery of the pressure plate is located on the concave surface of the pressure plate, and the height from the summit of the pressure plate to the periphery of the pressure plate is less than about 2 millimeters.
17. (Original) The retention mechanism of claim 16 wherein the height from the summit to the periphery is less than about 1.5 millimeters.
18. (Currently Amended) The retention mechanism of claim ~~11~~ 16 wherein the summit of the backing plate is located on the concave surface of the backing plate and the periphery of the backing plate is located on the convex surface of the backing plate, and the height from the periphery to the summit is less than about 2 millimeters.
19. (Original) The retention mechanism of claim 18 wherein the height from the periphery to the summit is less than about 1.5 millimeters.
20. (Currently Amended) The retention mechanism of claim ~~11~~ 16 wherein the integrated circuit package includes an organic land grid array.
21. (Currently Amended) The retention mechanism of claim ~~11~~ 16 wherein the integrated circuit package includes a flip chip pin grid array.
22. (Cancelled)

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 09/733476

Filing Date: December 8, 2000

Title: I/C PACKAGE/THERMAL SOLUTION RETENTION MECHANISM WITH SPRING EFFECT

Page 6

Dkt: 884.355US1

23. (Canceled)

24. (Currently Amended) An electronic assembly comprising:

a paraboloid, elastically deformable pressure plate, having a concave surface, a convex surface, a summit, and a periphery spaced away from the summit, the pressure plate deformed by first force applied to the periphery directed generally towards the summit;

an integrated circuit package having a top and a bottom surface, the top surface in contact with the convex surface of the pressure plate;

a circuit board having a top and a bottom surface, the top surface in contact with the bottom surface of the integrated circuit package; and

a paraboloid, elastically deformable backing plate, having a concave surface, a convex surface, a summit, and a periphery spaced away from the summit, the backing plate deformed a second force, opposing the first force, applied to the periphery of the backing plate directed generally towards the summit of the backing plate, the convex surface of the backing plate in contact with the bottom surface of the circuit board;

means for simultaneously applying the first and second deforming forces to the periphery of the pressure plate and the periphery of the backing plate

to engage the convex surface of the pressure plate with the top surface of the

integrated circuit package and the convex surface of the backing plate with

the bottom surface of the circuit board and

to deform the plates so as to effect continuous electrical continuity between the

integrated circuit package and the circuit board; and

The electronic assembly of claim 23 further comprising a connector interposed between the integrated circuit package and the circuit board, wherein an average contact resistance between the integrated circuit package and the circuit board is less than about 50 milliohms.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 09/733476

Filing Date: December 8, 2000

Title: I/C PACKAGE/THERMAL SOLUTION RETENTION MECHANISM WITH SPRING EFFECT

Page 7

Dkt: 884.355US1

25. (Currently Amended) The electronic assembly of claim ~~23~~ 24 further comprising an elastically deformable gasket interposed between the pressure plate and the integrated circuit package.

26 -31. (Canceled)